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09/895,948	06/29/2001	Shervin Erfani	3-26-22	8097

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Docket Administrator (Room 3C-512)
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Murray Hill, NJ 07974-0636

EXAMINER	
CURS, NATHAN M	

ART UNIT	PAPER NUMBER
2633	

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/895,948	ERFANI ET AL.	
	Examiner	Art Unit	
	Nathan Curs	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 May 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 October 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 8-10 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Moy et al. (US Published Patent Application No. 2003/0035411A1).

Regarding claim 1, Moy et al. disclose an apparatus for providing direct signaling for switching and control of transmissions in an integrated optical network, said apparatus comprising: a plurality of electrical signaling interfaces (fig. 1, elements TND and paragraph 0048) for receiving requests from external signaling networks (fig. 1, elements UD and IUD and paragraphs 0038 to 0040); a processing module for processing said requests from said external signaling networks (fig. 1, element TND and paragraph 0065); and at least one optical signaling interface for coupling to optical components in said integrated optical network (fig. 1, elements IUD and TND and paragraphs 0039, 0040 and 0047), said optical signaling interface being operable to transmit processed requests from said processing module for assignment of optical channels for said optical components (paragraphs 0059 and 0060), wherein said processing module operates in cooperation with said electrical and optical signaling interfaces to provide signaling in said integrated optical network that is independent of signaling methodologies employed by ones of said external signaling networks (paragraphs 0041 and 0042, which describe the variety of different possible protocols of the UD/IUD external signals, and

paragraphs 0099-0102, which describe the signaling across the OTN as independent of the protocols of the external signals, i.e. as based on, for example, MPLS or RSVP).

Regarding claim 8, Moy et al. disclose the apparatus of claim 1, wherein said optical signaling interface couples to said optical components through an optical user network interface (paragraphs 0033, 0036, 0039, 0040 and 0047).

Regarding claim 9, Moy et al. disclose the apparatus of claim 8, wherein said apparatus is further operable to control signaling (fig. 1, element TND and paragraph 0065) of electrical switching devices (paragraph 0041), where the User Devices can be electrical switching devices as disclose by Moy et al., and that couple to said apparatus through an optical service node (fig. 1, element TND and paragraphs 0047 and 0048).

Regarding claim 10, Moy et al. disclose the apparatus of claim 1, wherein said apparatus is operable to assign individual wavelengths in said optical components in accordance with requests from said external signaling networks and allocate calls to existing wavelengths (paragraphs 0059 and 0060).

Regarding claim 16, Moy et al. disclose a method for providing direct signaling for switching and control of transmissions in an integrated optical network, said method comprising: receiving requests from external signaling networks at an electrical signaling interface (fig. 1, elements TND and paragraph 0048 and elements UD and IUD and paragraphs 0038 to 0040); processing said requests from said external signaling networks (fig. 1, element TND and paragraph 0065); and transmitting processed requests from said processing module via an optical signaling interface that couples to optical components in said integrated optical network (fig. 1, elements IUD and TND and paragraphs 0039, 0040 and 0047) for assignment of optical channels for said optical components (paragraphs 0059 and 0060), wherein said processing step operates in cooperation with said receiving and said transmitting steps to provide signaling

in said integrated optical network that is independent of signaling methodologies employed by ones of said external signaling networks (paragraphs 0041 and 0042, which describe the variety of different possible protocols of the UD/IUD external signals, and paragraphs 0099-0102, which describe the signaling across the OTN as independent of the protocols of the external signals, i.e. as based on, for example, MPLS or RSVP).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 3 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moy et al. (US Published Patent Application No. 2003/0035411A1) in view of Wei et al. ("Network control and management of a reconfigurable WDM network"; Wei et al.; Military Communications Conference, 1996, IEEE Conference Proceedings, Vol. 2, Oct. 1996, Pages 581-586).

Regarding claim 3, Moy et al. disclose the apparatus of claim 1, wherein said optical components are selected from the group consisting of optical cross connects, add/drop multiplexers and optical service nodes (paragraphs 0042 and 0048). Moy et al. do not disclose at least one optical cross connect and optical add/drop multiplexer. Wei et al. disclose an optical network where an optical cross connect can serve as an optical add/drop multiplexer when interfaced with external elements (fig. 1 and page 581, col. 2, 1st paragraph of heading 2). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the optical cross connect of Wei et al. for the optical cross connects of Moy et al., in order to

provide the advantage of using an optical cross connect that can also functional as an optical add/drop multiplexer by interfacing the optical cross connect with external elements, such that separate OXC and optical ADM equipment are not required.

Regarding claim 18, Moy et al. disclose the method of claim 16, wherein said optical components are selected from the group consisting of optical cross connects, add/drop multiplexers and optical service nodes (paragraphs 0042 and 0048). Moy et al. do not disclose at least one optical cross connect and optical add/drop multiplexer. Wei et al. disclose an optical network where an optical cross connect can serve as an optical add/drop multiplexer when interfaced with external elements (fig. 1 and page 581, col. 2, 1st paragraph of heading 2). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the optical cross connect of Wei et al. for the optical cross connects of Moy et al., in order to provide the advantage of using an optical cross connect that can also functional as an optical add/drop multiplexer by interfacing the optical cross connect with external elements, such that separate OXC and optical ADM equipment are not required.

5. Claims 2, 4-7, 11-14, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moy et al. (US Published Patent Application No. 2003/0035411A1) in view of Berg et al. (US Patent No. 6680952).

Regarding claim 2, Moy et al. disclose the apparatus of claim 1, wherein said external signaling networks are selected from the group consisting of circuit switched signaling networks and packet switched signaling networks (paragraph 0042), but do not disclose that the group also includes SS7, H323, SIP and other enhanced signaling system (ESS) apparatus. However, Moy et al. do disclose that the external signaling networks can be any of a variety of apparatus for transmitting and receiving signals with various electrical or optical transmitting or

receiving, and multiplexing, switching, routing, etc. (paragraph 0041). Berg et al. disclose an external network gateway apparatus that handles signaling traffic from a variety of sources (col. 4, lines 30-44), where these sources include SS7, H323, SIP and other enhanced signaling systems (col. 6, lines 23-35), and where the external network gateway interfaces to a core network via electrical or optical interfaces (col. 7, line 65 to col. 8, line 13). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the gateway of Berg et al. as one or more of the User Devices of the signaling network of Moy et al. to provide the advantage of interfacing voice, voice over IP, and other signaling services directly with the dynamically provisionable OTN network of Moy et al. to create optical trails through the OTN of dynamic bandwidth corresponding to these additional services.

Regarding claim 4, Moy et al. disclose the apparatus of claim 1, wherein said processing module is a signaling processor (fig. 1, element TND and paragraph 0065), and that the external signaling networks can be any of a variety of apparatus for transmitting and receiving signals with various electrical or optical transmitting or receiving, and multiplexing, switching, routing, etc. (paragraph 0041), but do not disclose that said processing module is a call control processor. Berg et al. disclose an external network gateway apparatus that handles signaling traffic from a variety of sources (col. 4, lines 30-44), where these sources include SS7, H323, SIP and other enhanced signaling systems (col. 6, lines 23-35), and where the external network gateway interfaces to a core network via electrical or optical interfaces (col. 7, line 65 to col. 8, line 13). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the gateway of Berg et al. as one or more of the User Devices of the signaling network of Moy et al. to provide the advantage of interfacing voice, voice over IP, and other signaling services directly with the dynamically provisionable OTN network of Moy et al. to create optical trails through the OTN of dynamic bandwidth corresponding to these additional services.

Further, the processor of Moy et al. providing signaling processing for creating optical trails through the OTN of dynamic bandwidth corresponding to these additional call related services would inherently make the signaling processor of Moy et al. a call control processor.

Regarding claim 5, Moy et al. in view of Berg et al. disclose the apparatus of claim 4, further including a signaling and endpoint applications module coupled to said processor module for providing electronic and optical routing decisions (Moy et al.: paragraph 0065), where the firmware or software corresponding to the routing functions of the processor are the signaling and endpoint applications module.

Regarding claim 6, Moy et al. disclose the apparatus of claim 5, further including a network management and provisioning module for providing network management interaction for reporting of alarms and receiving commands for provisioning and reconfiguration of said apparatus (Moy et al.: paragraphs 0083 and 0084), where it would have been obvious to one of ordinary skill in the art at the time of the invention that the information about TNDs, ports and channels of TNDs, UDs, ports and channels of UDs, etc. of the network management module of Moy et al. would include alarm reporting information, as alarm reporting as part of network management of signaling services is well known in the art.

Regarding claim 7, Moy et al. disclose the apparatus of claim 6, and disclose a network management control system, or system administration module, for dynamic bandwidth provision on OTNs, providing an operator interface for administration and maintenance of said system (paragraphs 0005 to 0007).

Regarding claim 11, Moy et al. disclose an apparatus for providing switching fabric independent allocation of transport resources in an integrated optical network, said apparatus comprising: a plurality of electrical signaling interfaces (fig. 1, elements TND and paragraph 0048) for receiving requests from external signaling networks (fig. 1, elements UD and IUD and

paragraphs 0038 to 0040); a signaling module for processing said requests from said external signaling networks (fig. 1, element TND and paragraph 0065); a signaling and endpoint applications module coupled to said signaling and call control module for providing electronic and optical routing decisions (Moy et al.: paragraph 0065), where the firmware or software corresponding to the routing functions of the processor are the signaling and endpoint applications module; a network management and provisioning module for providing network management interaction for reporting of alarms and receiving commands for provisioning and reconfiguration of said apparatus (paragraphs 0083 and 0084), where it would have been obvious to one of ordinary skill in the art at the time of the invention that the information about TNDs, ports and channels of TNDs, UDs, ports and channels of UDs, etc. of the network management module of Moy et al. would include alarm reporting information, as alarm reporting as part of network management of signaling services is well known in the art.; and at least one optical signaling network interface for coupling to optical components in said integrated optical network (fig. 1, elements IUD and TND and paragraphs 0039, 0040 and 0047), said optical signaling interface being operable to transmit processed requests from said signaling module for assignment of optical channels for said optical components (paragraphs 0059 and 0060), wherein said signaling module operates in cooperation with said signaling and endpoint applications module and with said electrical and optical signaling interfaces to provide signaling in said integrated optical network that is independent of signaling methodologies employed by ones of said external signaling networks (paragraphs 0041 and 0042, which describe the variety of different possible protocols of the UD/IUD external signals, and paragraphs 0099-0102, which describe the signaling across the OTN as independent of the protocols of the external signals, i.e. as based on, for example, MPLS or RSVP). Moy et al. disclose that the external signaling networks can be any of a variety of apparatus for transmitting and receiving signals with various

electrical or optical transmitting or receiving, and multiplexing, switching, routing, etc. (paragraph 0041), but do not disclose that the signaling module is also a call control module. Berg et al. disclose an external network gateway apparatus that handles signaling traffic from a variety of sources (col. 4, lines 30-44), where these sources include SS7, H323, SIP and other enhanced signaling systems (col. 6, lines 23-35) for call signals, and where the external network gateway interfaces to a core network via electrical or optical interfaces (col. 7, line 65 to col. 8, line 13). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the gateway of Berg et al. as one or more of the User Devices of the signaling network of Moy et al. to provide the advantage of interfacing voice, voice over IP, and other signaling services directly with the dynamically provisionable OTN network of Moy et al. to create optical trails through the OTN of dynamic bandwidth corresponding to these additional services. Further, the processor of Moy et al. providing signaling processing for creating optical trails through the OTN of dynamic bandwidth corresponding to these additional call related services would inherently make the signaling processor of Moy et al. a call control processor.

Regarding claim 12, Moy et al. in view of Berg et al. disclose the apparatus of claim 11, wherein said apparatus is further operable to control signaling (Moy et al.: fig. 1, element TND and paragraph 0065) of electrical switching devices (Moy et al.: paragraph 0041), where the User Devices can be electrical switching devices as disclose by Moy et al., and that couple to said apparatus through an optical service node (Moy et al.: fig. 1, element TND and paragraphs 0047 and 0048).

Regarding claim 13, Moy et al. in view of Berg et al. disclose the apparatus of claim 11, wherein said apparatus is operable to assign individual wavelengths in said optical components in accordance with requests from said external signaling networks and allocate calls to existing wavelengths (Moy et al.: paragraphs 0059 and 0060).

Regarding claim 14, Moy et al. in view of Berg et al. disclose the apparatus of claim 11, wherein said external signaling networks are selected from the group consisting of circuit switched signaling networks, packet switched signaling networks (Moy et al.: paragraph 0042), and SS7, H323, SIP and other enhanced signaling system (ESS) apparatus (Berg et al.: col. 6, lines 23-35).

Regarding claim 17, Moy et al. disclose the method of claim 16, wherein said external signaling networks are selected from the group consisting of circuit switched signaling networks and packet switched signaling networks (paragraphs 0042), but do not disclose that the group also includes SS7, H323, SIP and other enhanced signaling system (ESS) apparatus. However, Moy et al. do disclose that the external signaling networks can be any of a variety of apparatus for transmitting and receiving signals with various electrical or optical transmitting or receiving, and multiplexing, switching, routing, etc. (paragraph 0041). Berg et al. disclose an external network gateway apparatus that handles signaling traffic from a variety of sources (col. 4, lines 30-44), where these sources include SS7, H323, SIP and other enhanced signaling systems (col. 6, lines 23-35), and where the external network gateway interfaces to a core network via electrical or optical interfaces (col. 7, line 65 to col. 8, line 13). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the gateway of Berg et al. as one or more of the User Devices of the signaling network of Moy et al. to provide the advantage of interfacing voice, voice over IP, and other signaling services directly with the dynamically provisionable OTN network of Moy et al. to create optical trails through the OTN of dynamic bandwidth corresponding to these additional services.

6. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moy et al. (US Published Patent Application No. 2003/0035411A1) in view of Berg et al. (US Patent No.

6680952) as applied to claims 2, 4-7, 11-14, and 17 above, and further in view of Wei et al. ("Network control and management of a reconfigurable WDM network"; Wei et al.; Military Communications Conference, 1996, IEEE Conference Proceedings, Vol. 2, Oct. 1996, Pages 581-586).

Regarding claim 15, Moy et al. in view of Berg et al. disclose the apparatus of claim 11, wherein said optical components are selected from the group consisting of optical cross connects, add/drop multiplexers and optical service nodes (Moy et al.: paragraphs 0042 and 0048). Moy et al. in view of Berg et al. do not disclose at least one optical cross connect and optical add/drop multiplexer. Wei et al. disclose an optical network where an optical cross connect can serve as an optical add/drop multiplexer when interfaced with external elements (fig. 1 and page 581, col. 2, 1st paragraph of heading 2). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the optical cross connect of Wei et al. for the optical cross connects of Moy et al. in view of Berg et al., in order to provide the advantage of using an optical cross connect that can also functional as an optical add/drop multiplexer by interfacing the optical cross connect with external elements, such that separate OXC and optical ADM equipment are not required.

7. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moy et al. (US Published Patent Application No. 2003/0035411A1) in view of Milton et al. (US Patent No. 6084694).

Regarding claim 19, Moy et al. disclose a system for providing direct signaling for switching and control of transmissions in an integrated optical network, said system comprising: a signaling apparatus including, a plurality of electrical signaling interfaces (fig. 1, elements TND and paragraph 0048) for receiving requests from external signaling networks (fig. 1, elements

UD and IUD and paragraphs 0038 to 0040); a processing module for processing said requests from said external signaling networks (fig. 1, element TND and paragraph 0065); and at least one optical signaling interface for coupling to optical components in said integrated optical network (fig. 1, elements IUD and TND and paragraphs 0039, 0040 and 0047), said optical signaling interface being operable to transmit processed requests from said processing module for assignment of optical channels for said optical components (paragraphs 0059 and 0060); wherein said processing module operates in cooperation with said electrical and optical signaling interfaces to provide signaling in said integrated optical network that is independent of signaling methodologies employed by ones of said external signaling networks (paragraphs 0041 and 0042, which describe the variety of different possible protocols of the UD/IUD external signals, and paragraphs 0099-0102, which describe the signaling across the OTN as independent of the protocols of the external signals, i.e. as based on, for example, MPLS or RSVP); and an optical service node including, at least one optical cross connect (OXC) (fig. 1, element TND and paragraph 0048); said OXC including at least one interface to an optical network or other optical components (fig. 2, element TND, 50, 56 and 62 and paragraph 0051), said optical service node coupling to said signaling apparatus through an optical user interface (paragraphs 0039, 0040 and 0047). Moy et al. do not disclose that the optical service node has at least one optical add/drop multiplexer (OADM) in addition to the OXC, the OADM including electrical interfaces to circuit switched and packet switched fabrics. Milton et al. disclose an optical add/drop multiplexer that uses WDM and is protocol and bit rate independent (col. 2, lines 11-29) with optical interfaces to the OTN side and electrical interfaces to the client side (col. 4, line 61 to col. 5, line 35). It would have been obvious to one of ordinary skill in the art at the time of the invention to interface the OADM of Milton et al. with the optical TND apparatus of Moy et al. to provide the advantage of being able to add/drop the various signals from the Moy

et al. network that are in a native electrical format external to the optical network, in addition to the disclosed optical cross connecting optical signals of the Moy et al. network at the optical TND apparatus.

Response to Arguments

8. Applicant's arguments filed 12 May 2005 have been fully considered but they are not persuasive.

Regarding all claims, the applicant argues against the primary reference, Moy et al. (hereinafter "Moy"). Specifically, the applicant argues that Moy does not show or suggest a signaling system that operates to interface multiple legacy external systems to an integrated optical network *independently of the signaling techniques/protocols of those multiple external signaling systems* (emphasis added). The applicant also argues that Moy is not focused on signaling; however a large part of Moy, e.g. section "5" (paragraphs 0100-0157), addresses signaling. Further, Moy describes the external systems of the UD/IUD devices as legacy systems, including IP routers, ATM switches, SONET add/drop multiplexers, or wavelength switches (paragraph 0042). However, Moy then describes the signaling used to transmit external UD/IUD traffic across the OTN as being different from, i.e. independent of, the protocols of those external networks; specifically, Moy discloses the signaling across the OTN being based on e.g. MPLS or RSVP (paragraphs 0099-0102).

Conclusion

9. Any inquiry concerning this communication from the examiner should be directed to N. Curs whose telephone number is (571) 272-3028. The examiner can normally be reached M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached at (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

JASON CHAN
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